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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,758	04/09/2004	David Anthony Stafford	3011-1006	8788
466	7590	10/24/2005		
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER PRINCE, FRED G	
			ART UNIT 1724	PAPER NUMBER

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/820,758

Applicant(s)

STAFFORD, DAVID ANTHONY

Examiner

Fred Prince

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-12 is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 7 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0404,0804</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 8 is objected to because of the following informalities: Each clause of the claim ends with a period (.). A claim must consist of only period (.), the period being located at the end of the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Spohr (US Pat No 3,166,501).

Spohr teaches an apparatus for treating organic waste, comprising an anaerobic digester (2) for receiving organic waste, an aerobic digester (4), and means (3, 19, 20) for pumping effluent from the anaerobic digester to the aerobic digester, the digesters each comprising a reaction vessel and each reaction vessel having a spray nozzle (23; col. 3, lines 1-2 and 35-40) at or adjacent to its upper end for spraying an anti-foam liquid at the contents of the vessel.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spohr in view of Ichiyanagi et al. (JP 61-185372).

Spohr is described above. Spohr does not disclose using a reverse osmosis membrane downstream of the anaerobic and/or aerobic digester.

Ichiyanagi et al. teach an apparatus comprising a reverse osmosis membrane downstream of an anaerobic and aerobic digesters in order to, for example, enhance the quality of treated water (abstract).

It would have been readily obvious for the skilled artisan to modify the apparatus of Spohr such that it includes a reverse osmosis membrane downstream of an anaerobic and aerobic digesters in order to, for example, enhance the quality of treated water, as suggested by Ichiyanagi et al.

5. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spohr in view of Hunziker et al. (US Pat No 4,511,370).

Spohr is described above. Spohr does not disclose recycling gas from an upper portion of the anaerobic digester to the lower end of the anaerobic digester.

Hunziker et al. teach recycling gas from an upper portion of an anaerobic digester to a lower end (Fig. 1) in order to, for example, enhance mixing of effluent in the anaerobic

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digester and facilitate more rapid treatment of the effluent (col. 1, lines 31-35; col. 2, lines 44-47).

It would have been readily obvious for the skilled artisan to modify the apparatus of Spohr such that it includes recycling gas from an upper portion of an anaerobic digester to a lower end in order to, for example, enhance mixing of effluent in the anaerobic digester and facilitate more rapid treatment of the effluent, as suggested by Hunziker et al.

Regarding using a pump and nozzle to feed gas to the digester, it is submitted that it is conventional in the art to use a pump and nozzle to feed gas to a digester in order to, for example, control the rate at which gas is fed and control the size or distribution of bubbles in the effluent. Accordingly, it would have been readily obvious for the skilled artisan to utilize a pump and nozzle to recycle gas to the digester in order to, for example, control the rate at which gas is fed and control the size or distribution of bubbles in the effluent, as known in the art.

***Allowable Subject Matter***

6. Claims 8-12 are allowed.
7. Claims 2-3 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Per claims 2-3, while claim 1 is not patentable for the reasons provided above, and it is known in the art to utilize a venturi mixer within an aerobic digester (see, for

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example, US Pat No 6,514,410 to Gantzer), in the examiner's opinion, the prior art fails to teach or render obvious combining the above known elements with means for varying the flow rate at which the effluent is pumped through the mixer according to the volume and organic content of the effluent fed into the vessel.

Per claim 6, while claim 4 is not patentable for the reasons provided above, in the examiner's opinion, the prior art fails to teach or render obvious adding a settlement tube positioned to increase the retention time of solids in the vessel.

Per claim 8, while it is known in the art to treat organic wastes feeding the organic waste into an anaerobic digester, feeding and mixing the waste in the digester contents in a predetermined controlled cycle, pumping effluent from the anaerobic digester to an aerobic digester and spraying an anti-foam liquid at the contents of both of the digesters (see, for example, US Pat No 3,166,501 to Spohr), mixing the organic waste in the aerobic digester with air by pumping the organic waste through a Venturi mixer which draws air into the organic effluent (see, for example, US Pat No 6,514,410 to Gantzer), in the examiner's opinion, the prior art fails to teach or fairly suggest combining the above known steps with measuring the organic content of the effluent fed into the aerobic digester in such a way that the flow rate at which organic waste is pumped through the Venturi mixer according to the volume and organic content of the sludge fed into the aerobic digester is varied.

### ***Conclusion***


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of the art.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Prince whose telephone number is (571) 272-1165. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Fred Prince  
Primary Examiner  
Art Unit 1724

fgp  
10/18/05